R E M A R K S

In the Office Action, claims 1, 13-17, 26 and 28 were rejected under 35 USC 103(a) as unpatentable over Epple et al '404 in view of Bray '904 on the grounds set forth in the Office Action. Claims 1, 3, 5, 25 and 26 were rejected under 35 USC 103(a) as unpatentable over Molari '375 in view of Bray '904 for the reasons stated in the Office Action. Claims 1, 3, 5 and 26 were rejected under 35 USC 103(a) as unpatentable over Merkel et al '051 in view of Bray '904 on the grounds set forth in the Office Action. Claims 6 and 30 were rejected under 35 USC 103(a) as unpatentable over Merkel et al '051 in view of Bray '904 as applied to claims 1 and 3, and further in view of Keen '424 for the reasons stated in the Office Action. Claim 27 was rejected under 35 USC 103(a) as unpatentable over Epple et al '464 in view of Bray '904 as applied to claim 1, and further in view of Edwards '337 on the grounds set forth in the Office Action. Claims 25 and 29 were rejected under 35 USC 103(a) as unpatentable over Epple et al '464 in view of Molari '375 and Bray '904 for the reasons stated in the Office Action.

In this response, claim 1 is amended to clarify the distinction between the present invention and the teachings of the cited art. Included in claim 1 (as amended) are features of former claim 13 which accordingly has been cancelled. Also specific constructional features of the fluidic nozzle have been deleted because they are taught in Bray '904. The description of the motor has been broadened to include for example, an electric motor or a motor driven by washing fluid. The composite structure of the washing arm and the push rod results in a parallel displacement in successive positions of the washing arm, rather than the pivoting motion disclosed in the cited art. The

parallel displacement provides a move efficient usage of the fluid nozzle(s) carried by the washing arm. The shaping of the push rod enables the push rod to move over the shield without contacting the shield.

The amended claim 1 makes clear that the movement of the washing arm occurs simultaneously with the spraying of washing fluid during the oscillation of the washing fluid jet, in other words, if the cleaning system is activated, the simultaneously a longitudinal movement of the washing arm occurs together with a transversal movement of the washing fluid jet.

In addition, the direction of oscillation of the fluidic jet is stated in claim 1 to be essentially transverse to a direction of movement of the washing arm. Thereby, there are two directions of movement of the jet, namely, the movement direction of the washing arm and the oscillation direction. The two directions of movement of the jet provide for a path of liquid laid down on the shield. Due to the transverse orientation of the washing arm, the paths of additional nozzles carried by the washing arm are parallel to each other for complete coverage of the shield. Such an arrangement is not taught by a combined teachings of the cited art.

Eppele et al '464 disclose a cleaning system in which the washing nozzle first is moved from a rest position into the operation setting (column 2, lines 10-13) and only after the washing nozzle has reached its operating setting, then the cleaning procedure starts. It is clear from Fig. 1 and 2 that a spraying of washing fluid starting already in the resting position makes no sense since the washing fluid jet could not hit the shield of the lamp.

It is understood that such a spraying would increase the water consumption without improving the cleaning of the shield.

Merkel et al '051 and Molari '375 disclose cleaning systems with moving washing arms and the washing fluid is sprayed during the movement of the arm. However, both systems comprise washing arms being pivoted around fixed axes and therefore, both cleaning systems cover a segment of a circle only. This means that the washing fluid does not reach the corners of the shield while in other parts the washing fluid reaches the edge of the shield.

Merkel et al further describe a washing arm with an adjustable length and a possibility for rotation about the longitudinal axes of the arm in order to extend the region covered by the washing fluid. However, it is clear that if one wishes to increase the area covered by the washing fluid with a pivoting washing arm, it makes no sense to use a fluidic nozzle since it is not possible to synchronize the oscillation of the washing fluid jet with the reciprocating swivelling movement of the washing arm.

If a fluidic nozzle would be used together with a swivelling washing arm, then due to the accidental momentary direction of the washing fluid jet, it could happen both that the corners of the shield would not be cleaned and the washing fluid jet in another position of the arm would not be directed onto the shield with the effect of increasing the consumption of the washing fluid and causing stains on the car body.

A corresponding argument applies to independent claim 25. The art teaches use of a stationary fluidic nozzle. The art presumes that moving arms are not required if a moving jet of a fluidic nozzle is employed. Therefore there is no suggestion for a

combining of a longitudinal motion of nozzle with transverse jet movement. Accordingly, this argument is believed to overcome the grounds of rejection to show allowable subject matter in the independent claims 1 and 25, and their respective dependent claims.

In the event there are further issues remaining the Examiner is respectfully requested to telephone attorney to reach agreement to expedite issuance of this application.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "Version with markings to show changes made"

Since the present claims set forth the present invention patentably and distinctly, and are not taught by the cited art either taken alone or in combination, this amendment is now believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, enter this amendment, and to allow all of the claims in this case.

Respectfully submitted,
Joachim Bandemer, et al

by: _____
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CERTIFICATE OF MAILING UNDER 37 CFR SECTION 1.8(a)

I hereby certify that the accompanying Amendment is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents & Trademarks, Washington, D.C. 20231, on June 27, 2002.

Dated: June 27, 2002

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USA National Stage Patent Application
PCT/EP97/05478 filed October 6, 1997
Joachim Bandemer, et al
Serial No.: 09/308,314
Filed: May 13, 1999
SHIELD CLEANING SYSTEM, OPERATING
SOLELY BY SPRAYING WITH WASHING FLUID
Examiner: Gary K. Graham
Group art unit: 1744

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

1. (four times amended) A shield cleaning system, operating [solely] by spraying with washing fluid, for shields of an automobile, comprising:

[an electric] a motor, and a washing arm movable over and at a distance from the shield by said [electric] motor, and a push rod interconnecting the motor with the washing arm for displacing the washing arm in a longitudinal direction of the push rod, the washing arm extending transversely of the direction of longitudinal displacement;

[a] at least one fluidic washing nozzle arranged on the washing arm for spraying washing fluid onto the shield [,];

wherein the washing nozzle [(12-14, 25, 38, 50, 54, 63) is formed for spraying a part region of the shield (2, 34, 49, 55, 65) and] is movable by the washing arm [(6, 37, 48, 53)] over a region of the shield [(2, 34, 49, 55,

65)] which is to be cleaned, wherein the washing nozzle has an outlet opening facing said shield [in and defining all spraying positions of the nozzle and that of the washing arm immediately during movement of the washing arm from a basic position], and the washing nozzle is sprayable on at least portions of the shield immediately during [all of said] movement of the washing arm from a basic position of the washing arm; and

wherein the fluidic washing nozzle [(12-14, 25, 38, 50, 54, 63) is a fluidic nozzle with] has a washing fluid jet oscillating essentially transversely to the direction of movement of the washing arm [(6, 37, 48, 53), the fluidic nozzle comprising a swirl chamber with return ducts to an inlet region of the swirl chamber to induce oscillation of an emerging fluid washing jet.], and a shape of the push rod corresponds to a contour of the shield.

14. (three times amended) The shield cleaning system as claimed in claim 1, wherein, in [a] the basic position, the washing nozzles (12-14, 38) are countersunk in a recess (5, 36) of an automobile component adjacent to the shield (2, 34).

17. (three times amended) The shield cleaning system as claimed in claim [13]1, wherein a guide (41) of the push rod (39) or a mounting of the washing arm is in one piece with a housing (44) of the automobile lights (35).